



Ottmar Klaas, Ph.D.

**Senior Software Engineer
Simmetrix Inc.**

ottmar.klaas@gmail.com



Simmetrix Inc.

Founded in 1997

RPI Incubator Center

Located in Clifton Park, NY

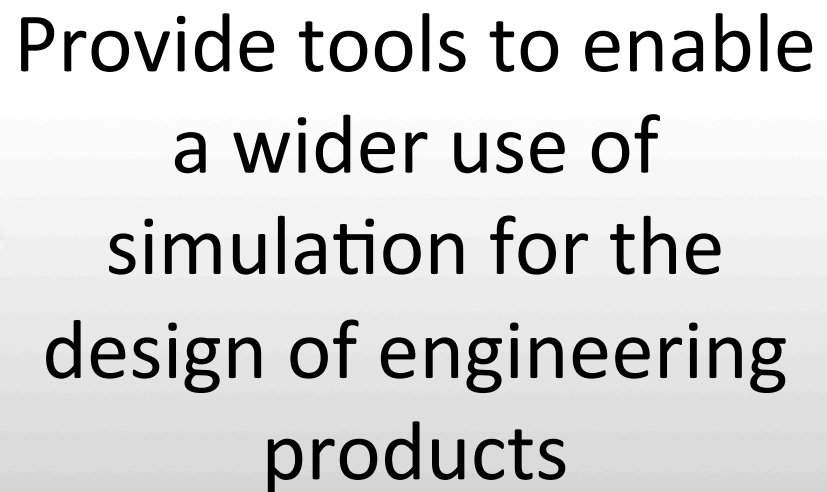
7 Software Engineers

Private Corporation

> 50 customers (CAE, CAD)



Simmetrix
Mission



Provide tools to enable
a wider use of
simulation for the
design of engineering
products

Component
software



End User
Software

Component software

Customers
are software
companies

Sales/Marketing require
less manpower

Support is less time
consuming

Business model is less
sensitive to economy

Component software

Customers
are software
companies

No control of bringing
technology to end user

Difficult to demo

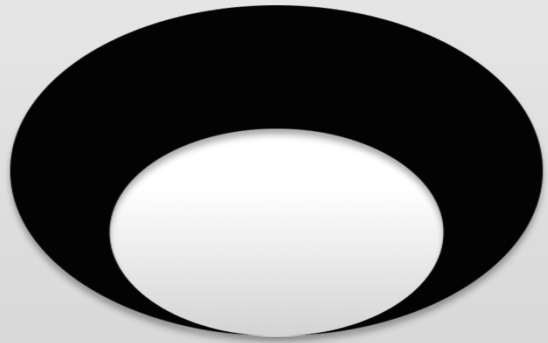
Long sales cycle

Simmetrix
End User
Software

SBIR/STTR Research
projects

Consulting

Don't compete with your
primary customers



TECHNOLOGY

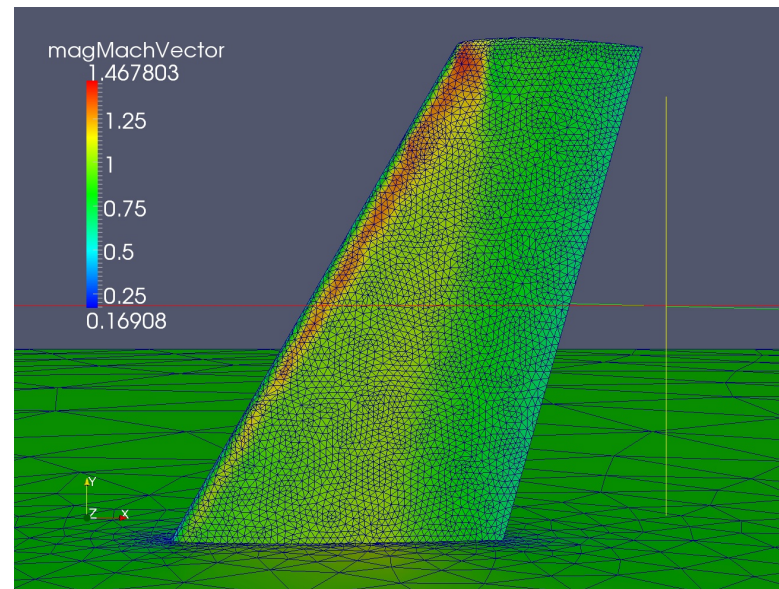
**Physical
Prototypes**



**Computer
Simulations**



Picture source:<http://hilftpw.larc.nasa.gov/>



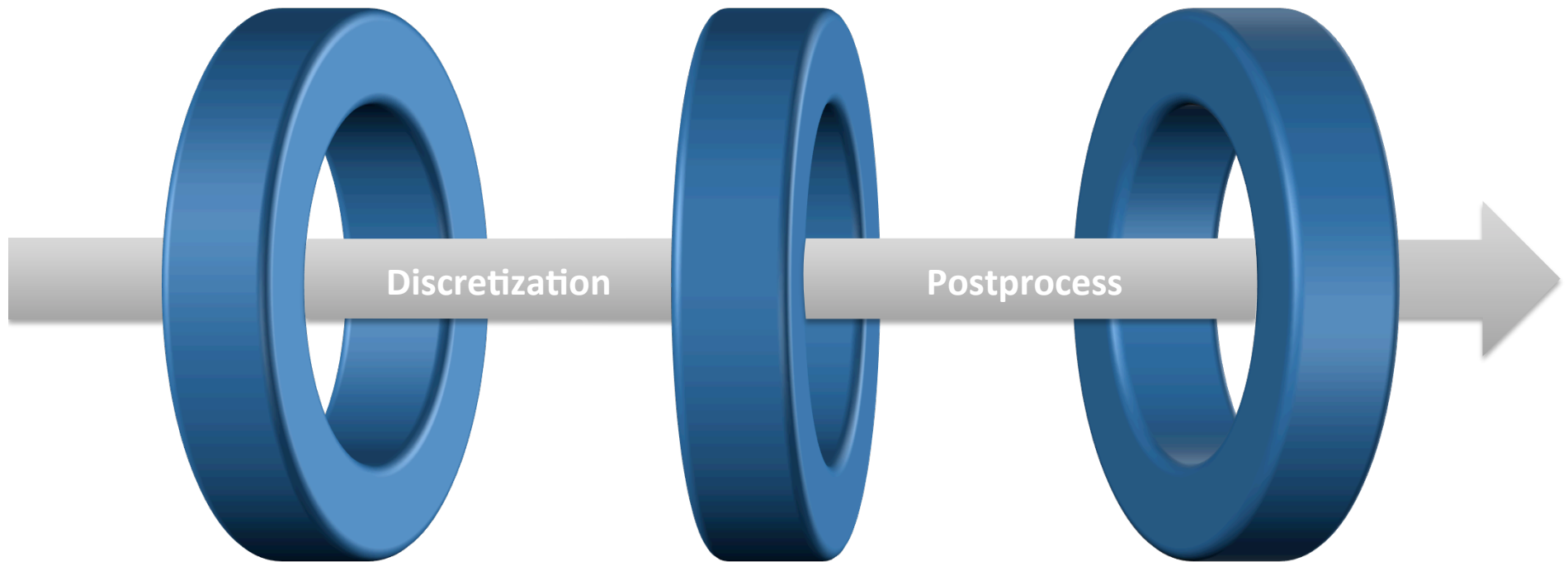
Solver: NASA FUN3D, Meshing: Simmetrix Inc.

Digital Product Development

Old/New
Design

Simulation

Evaluation



Scientific Computing

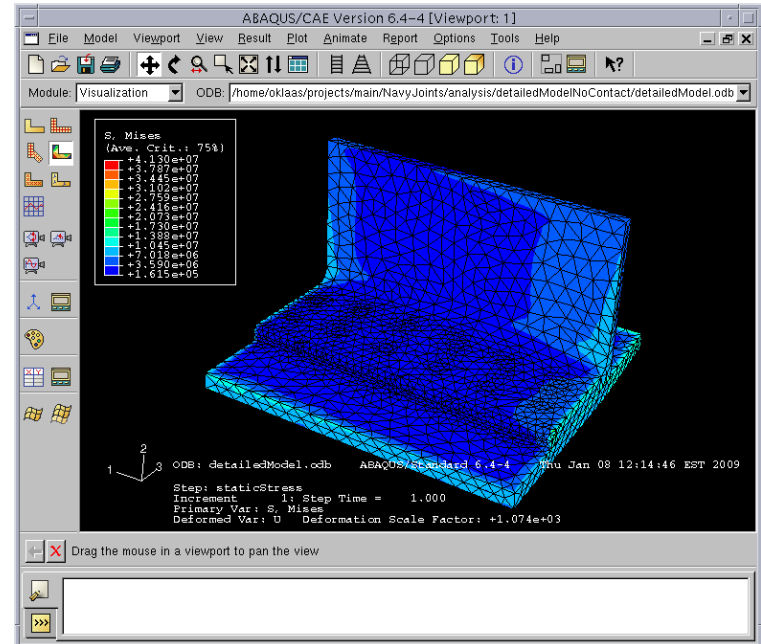
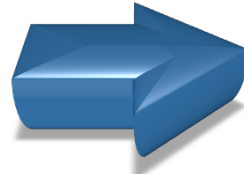
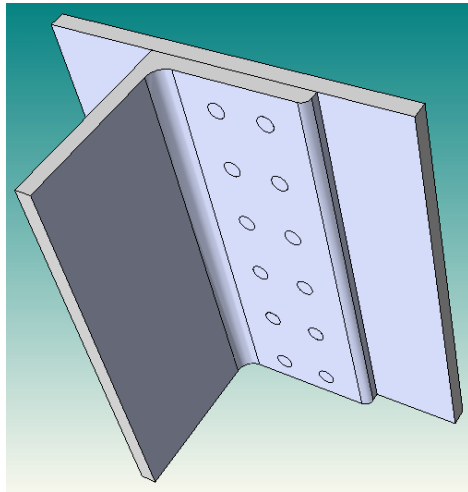
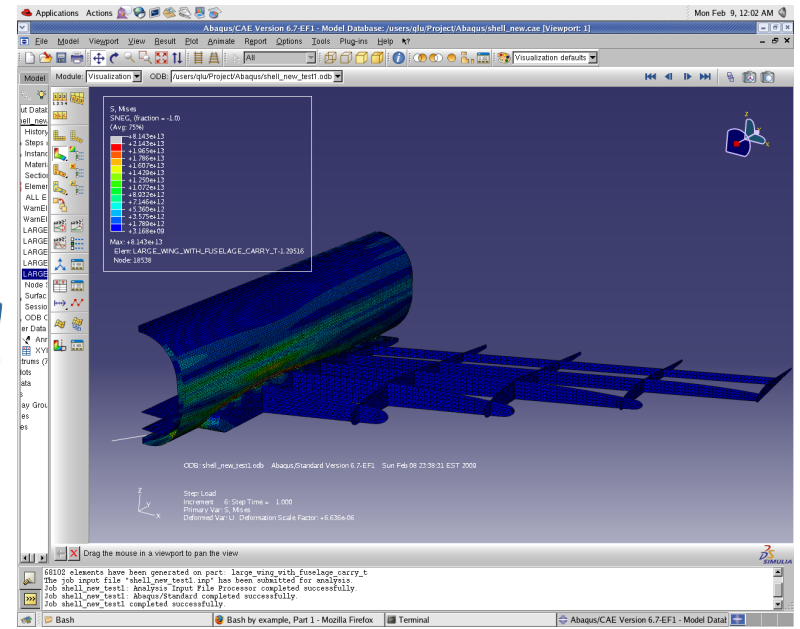
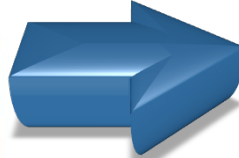
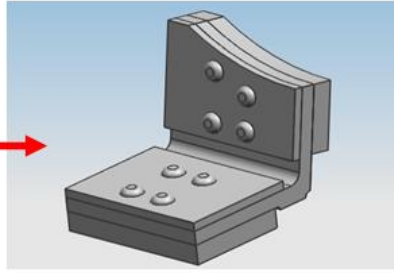
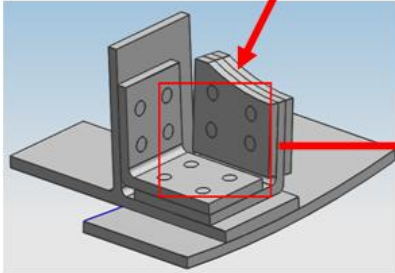
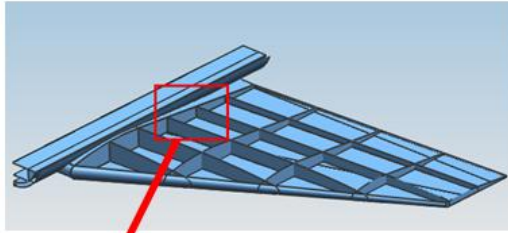
Distributed Systems

Simmetrix
Software

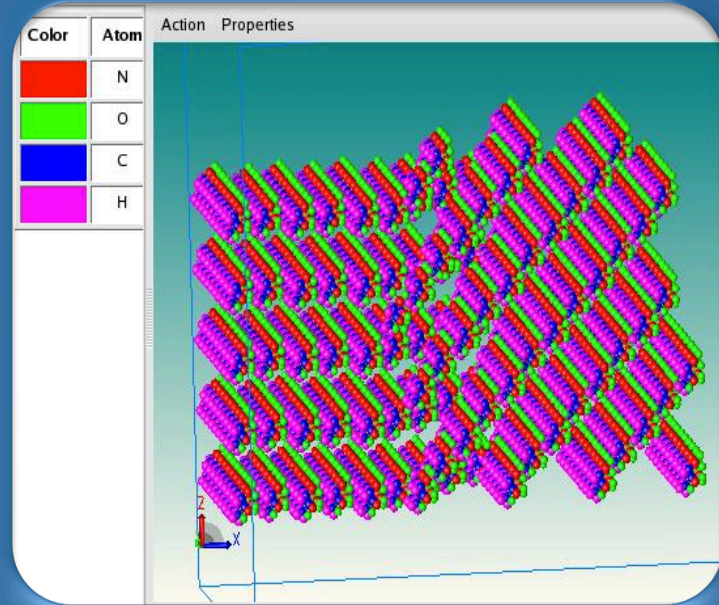
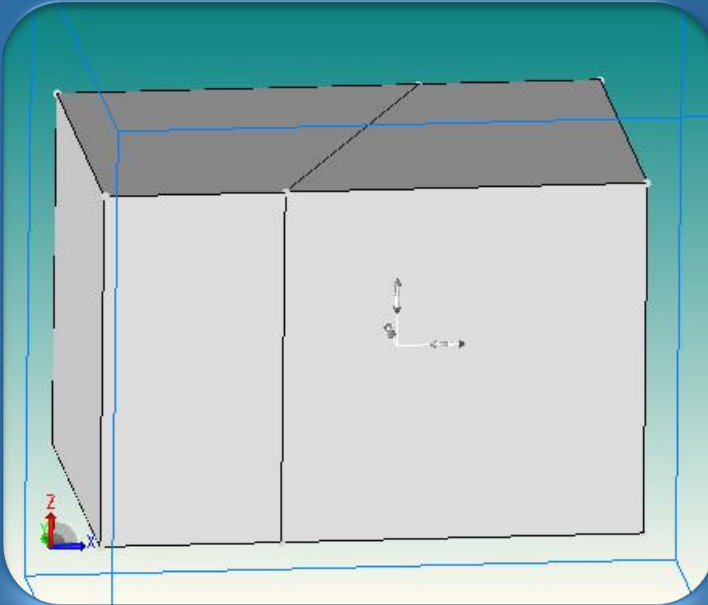
Computer Graphics

Software Engineering

Scientific Computing

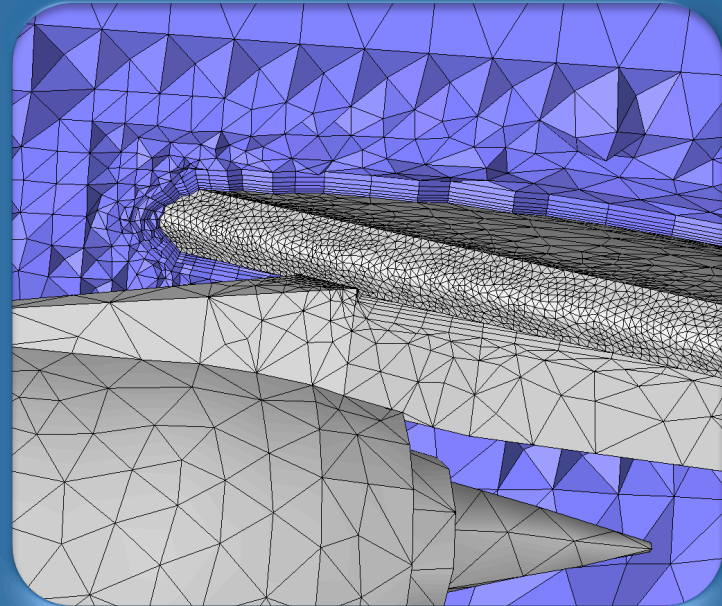
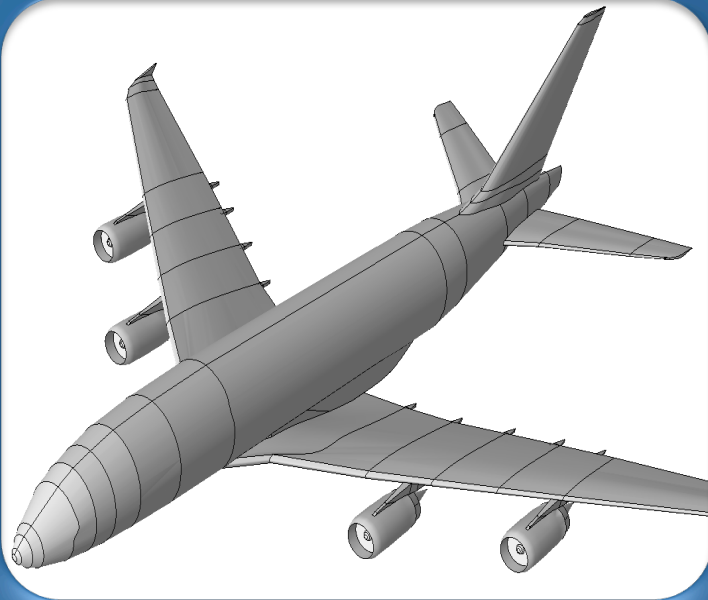


Multiscale Analysis

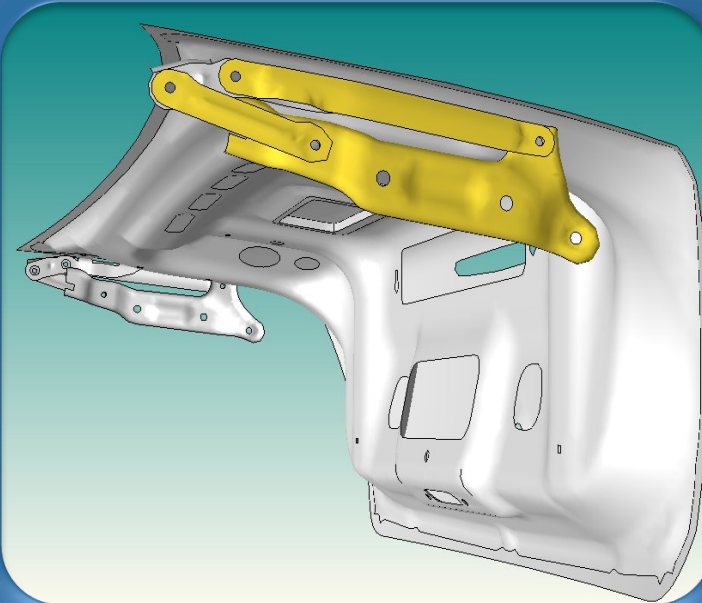
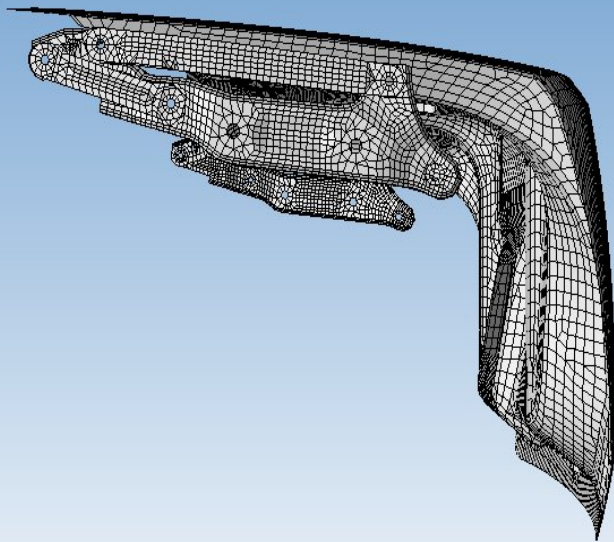


Computer Graphics

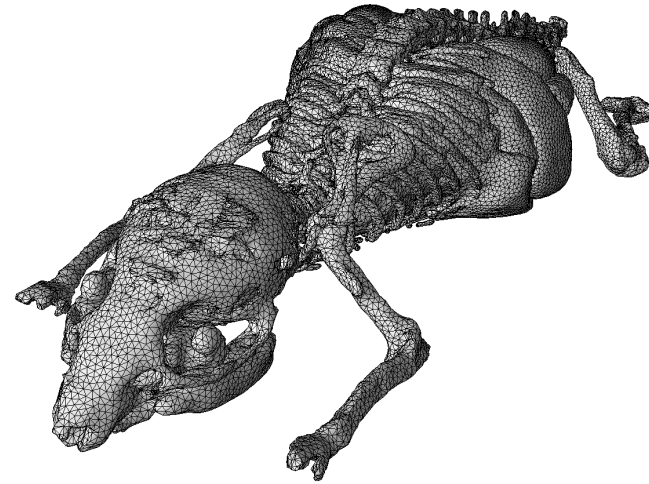
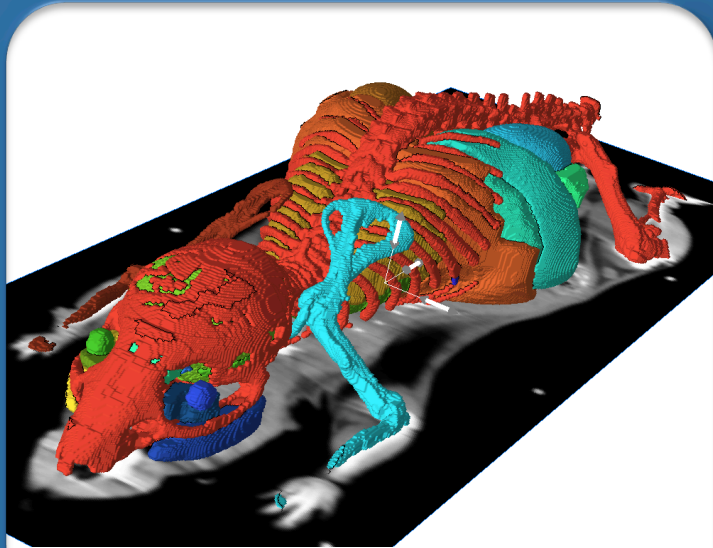
Mesh generation from geometric models



Model generation from meshes

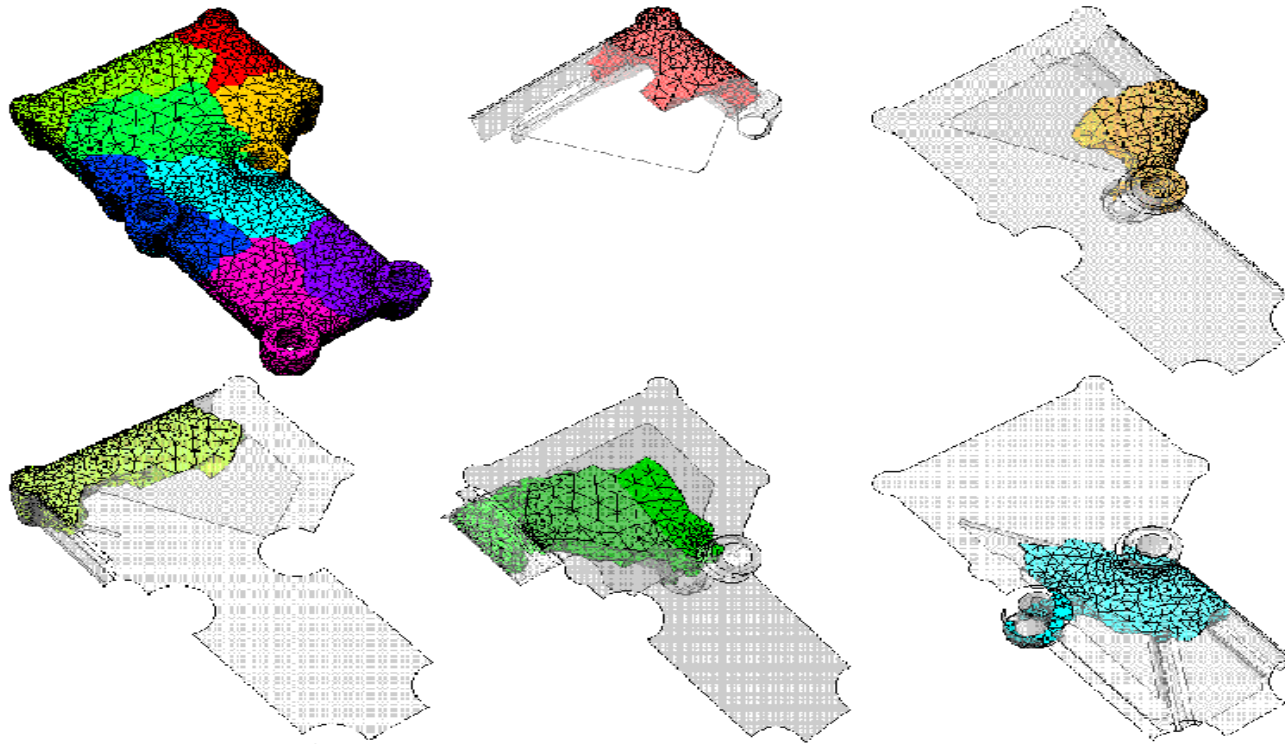


Model/Mesh generation from MRI data



Distributed Systems

Distributed data to utilize supercomputer

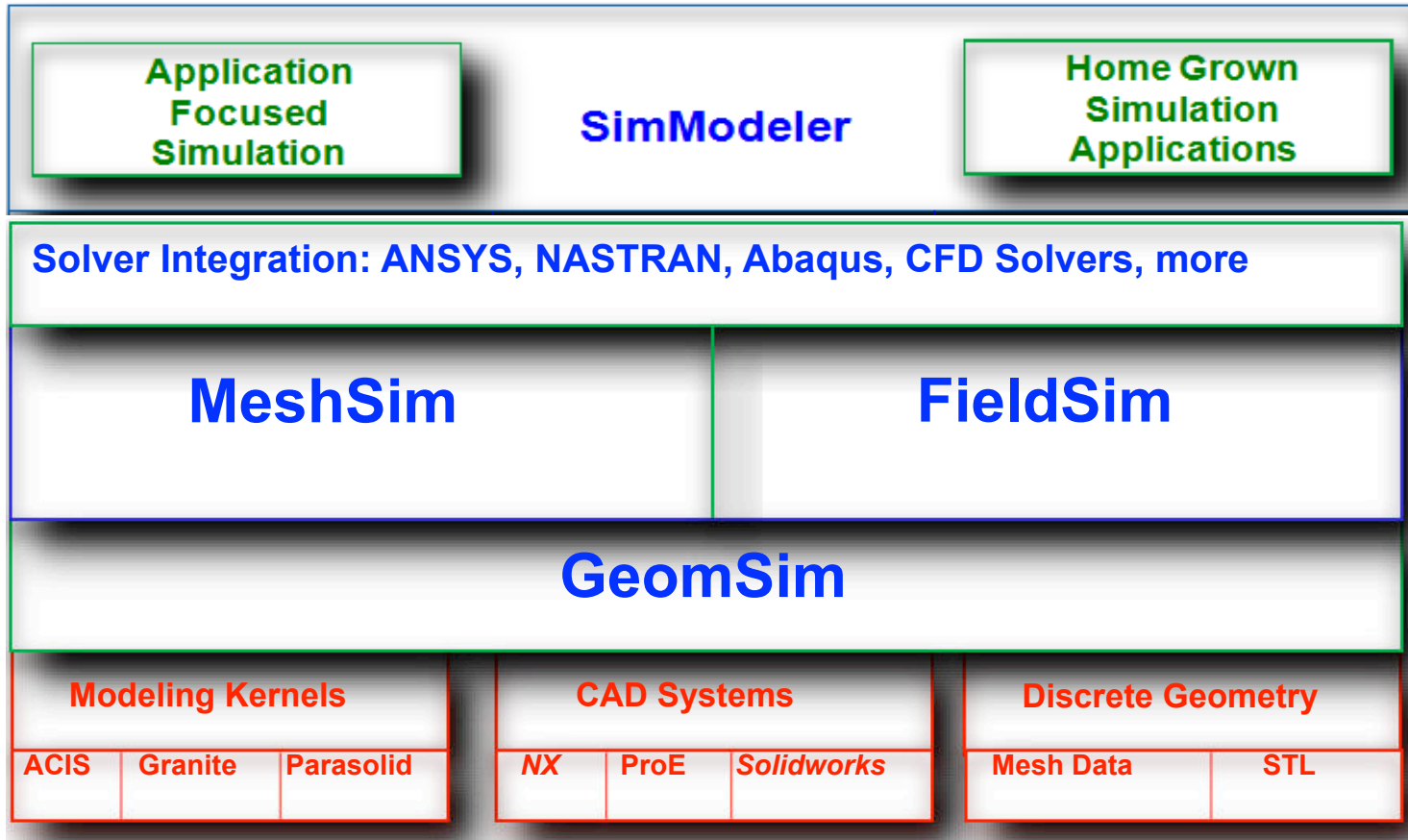


Software Engineering



Software





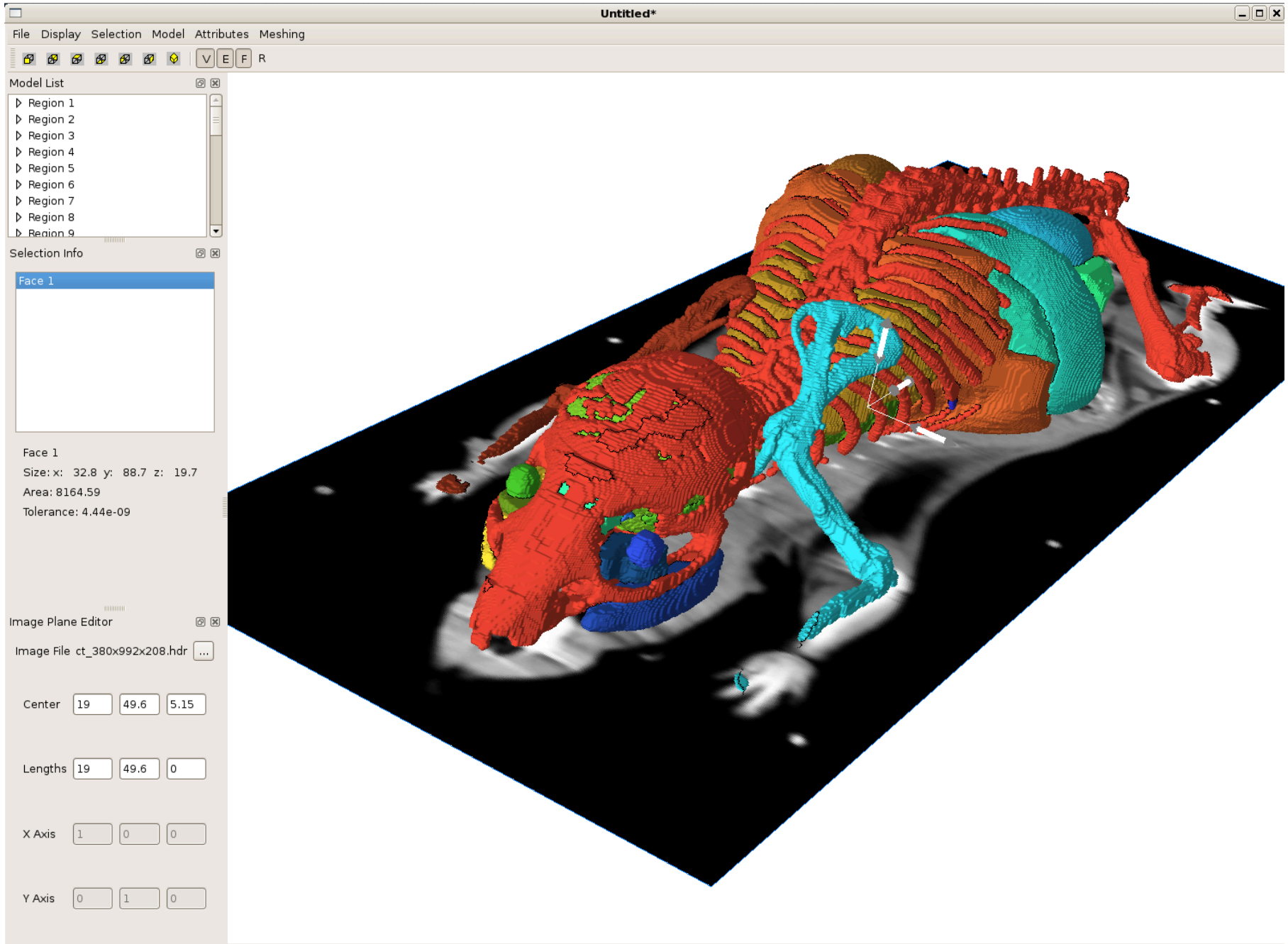
Simmetrix software

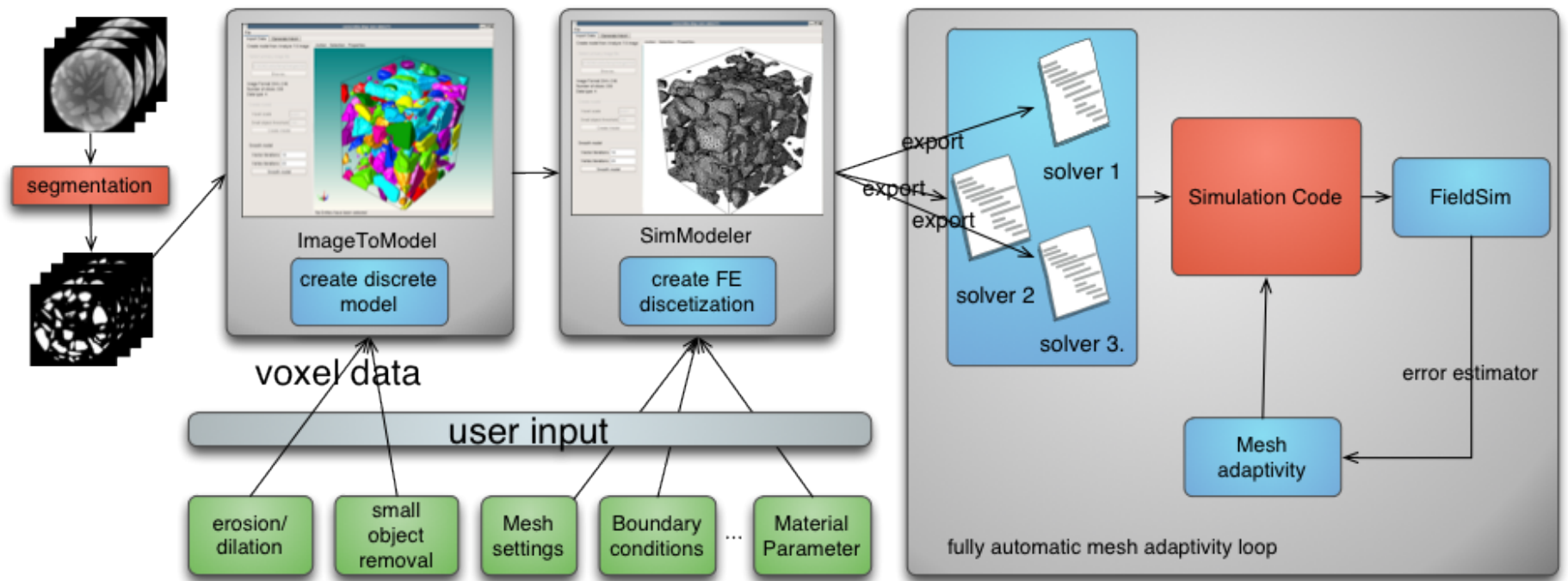
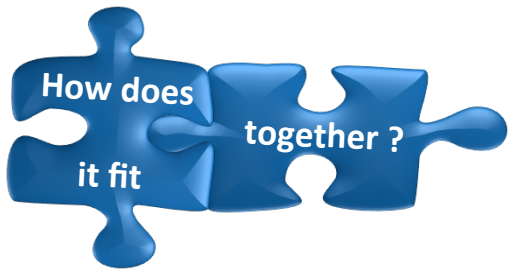
Graphical
User
Interfaces

Mesh Generation

Image to Model

Consulting specific





Red: Non-Simmetrix code

Blue: Simmetrix code



Sample of Simmetrix' Customers



SOFTWARE DEVELOPMENT

Tools/Processes

Source Code Control

Perforce
<http://perforce.com>

Has been flawless
for our needs

Supported Platforms

32/64 bit Linux

Windows: VC8, VC9, VC10

Windows: shared libraries

Windows: service packs

Esoteric (IBM Blue Gene)

Dependent on CAD vendor

Build System

Linux based
(Makefiles)

Windows
integration:cygwin

Full build every night
(all platforms)

Regression Testing

All platforms, each day
> 2700 tests

Building executables is
bottleneck: lua scripting

Dashboard (HTML) provides
overview of failed tests

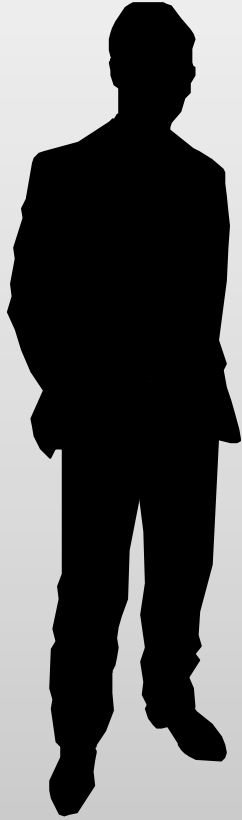


Deploy

Component Software:
Download link

GUI on linux: zip file

GUI on windows: installer



MY DAY

Senior
Software
Engineer

Principal Investigator on
SBIR/STTR Research Grants

Software Development

Marketing/Sales support

?

?

?